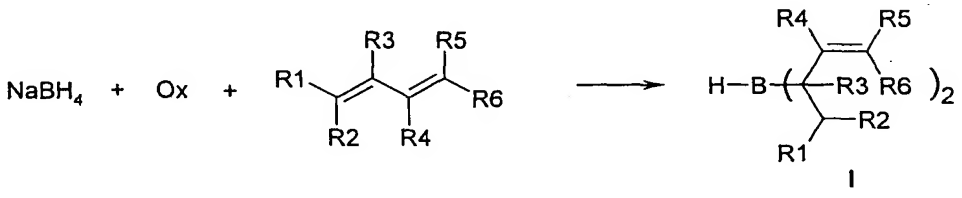
Claims:

1. A process for preparing bisallylboranes of the formula (I) by reacting a diene with sodium borohydride in the presence of an oxidant



I

in an inert solvent, with the borane generated in situ reacting selectively with the diene to form the bis(allyl)borane of the formula (I) and the substituents R^1 to R^6 having the following meanings:
R^1-R^6 are H, aryl or substituted or unsubstituted C_1-C_4-alkyl or two radicals R may be closed to form a cyclic system.

2. The process as claimed in claim 1, wherein the diene used is 2,5-dimethylhexa-2,4-diene (R^1, R^2, R^5, R^6 = methyl, R^3, R^4 = H).

3. The process as claimed in claim 1, wherein the oxidant used is an alkyl halide or dialkyl sulfate.

4. The process as claimed in claim 1, wherein the oxidant used is dimethyl sulfate or diethyl sulfate or benzyl bromide or iodoethane.

5. The process as claimed in claim 1, wherein the inert solvent used is an ether or a (C_1-C_{10})-hydrocarbon or a mixture thereof.

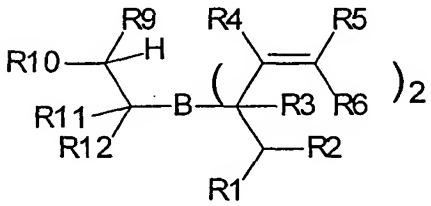
6. The process as claimed in claim 1, wherein the inert solvent used is diglyme.

7. The process as claimed in claim 1, wherein the diene is used in an amount of from 1 to 10 molar equivalents based on the sodium borohydride.

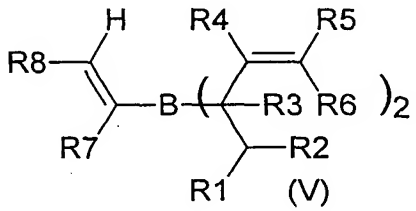
8. Di(1-1-isopropyl-3-methylbut-2-enyl)borane of the formula (Ia).

9. A bis(allyl)borane of the formula (I) obtainable by a process as claimed in claim 1.

10. A Suzuki coupling reaction product obtained through use of a bis(allyl)borane of the formula (III) or (V) in C-C coupling reactions

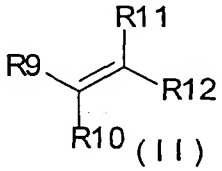


(III)

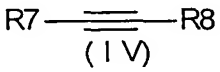


(V)

11. A process for preparing boronic acids by reaction of a diene with sodium borohydride in the presence of an oxidant to form the corresponding bis(allyl)borane of the formula (I) as described in claim 1 and further reaction of the borane (I) with an appropriate alkene (II) or alkyne (IV) to give the

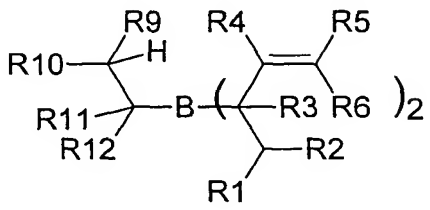


(II)

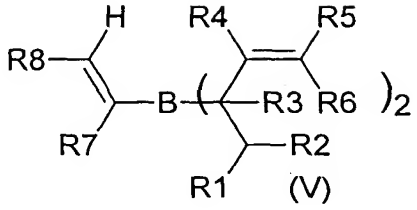


(IV)

alkylbis(allyl)borane (III) or alkenylbis(allyl)borane (V)



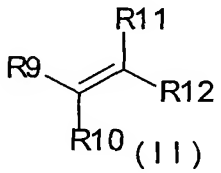
(III)



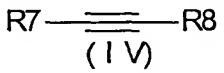
(V)

which is oxidized directly in the presence of an oxidant to form the corresponding bisallyl alkylboronate or alkenylboronate and, if desired, subsequent conversion into a derivative.

12. The process as claimed in claim 11, wherein use is made of alkenes of the formula (II) and alkynes of the formula (IV)



(II)



(IV)

in which the radicals R^7 to R^{12} have the following meanings: aryl, substituted or unsubstituted, alkyl-(C_1-C_8), which may be branched and/or substituted, alkoxy-(C_1-C_8), acyloxy-(C_1-C_8), Ophenyl, fluorine, chlorine, NO_2, NH_2, NHalkyl-(C_1-C_8), Nalkyl$_2$-(C_1-C_8), CN, CHO, SO_3H, SO_3R, SO_2NH_2, SO_2N(alkyl-(C_1-C_8))$_2$, SO_2-alkyl-(C_1-C_8), COO-alkyl-(C_1-C_8), $CONH_2$, CO-alkyl-(C_1-C_8),

NHCHO, CF_3, 5-membered heteroaryl or 6-membered heteroaryl, where two radicals may also form a cyclic ring system which may contain heteroatoms.

13. The process as claimed in claim 11, wherein the oxidant used is formaldehyde, acetone, glyoxal or diacetyl.

14. A Suzuki coupling reaction product obtained by using bis(allyl) alkylboronate or alkenylboronate produced as claimed in claim 11 in C-C coupling reactions.